

THE
ARCTIC
PLANTS
OF
NEW
YORK
CITY

JAMES WALSH



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*Full many a Gem of purest Ray serene,
The dark unfathom'd Caves of Ocean bear:
Full many a Flower is born to blush unseen,
And waste its Sweetness on the desert Air.*

Gray's Elegy

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GRANARY BOOKS
NEW YORK CITY
2015

*I desire the courteous Reader to accept at present of these for Sample, to shew him that
on these rough, barren and cold Mountains, there yet grow some Plants,
for the Nourishment both of Man and Beast.*

Frederick Martens, *The Voyage into Spitzbergen and Greenland*

Be rather the Mungo Park, the Lewis and Clark and Frobisher, of your own streams and oceans; explore your own higher latitudes.

Henry David Thoreau, *Walden*

The need for a single treatment of all the vascular plants reaching truly arctic regions has long been evident.

Thus begins *Circumpolar Arctic Flora*, Nicholas Polunin's classic survey of the plants of the arctic, which summarizes a lifetime of fieldwork and study. In the late fall of 2008 I began to wonder about the less evident need for a guide to the arctic plants growing spontaneously in New York City. Earlier that year, spurred on by my reading of the great Swedish naturalist Carl Linnaeus, I had made a plant press and started to collect and identify whatever I could find in flower. I was completely captivated by it through that summer and fall. As winter approached and there were no more plants to collect, my thoughts naturally turned to the arctic and the search for the Northwest Passage and the accounts of early scientific travelers looking for new species. Though I had long been fascinated by the arctic, I had no immediate plans to go there, and devised instead a form of mental travel. In the spirit of Robert Burton's famous declaration in *The Anatomy of Melancholy* (1621) — "I never travelled but in map and card" — I embarked on a project of discovering the arctic by staying close to home and paying particular attention to the libraries and land around me, searching for whatever arctic plants I could find there. This territory is what I came to call *the near arctic*, the arctic that is close to hand. I didn't know when I set out whether there were *any* arctic plants in New York City but my research turned up quite a few. Some are what could be called true or native or indigenous arctic plants whose southern range extends to New York City, and most are European weeds, plants that were introduced to both the arctic and New York City as the European powers explored and settled this continent.

The botanists themselves are in some disagreement over where in fact the arctic is located, their only point of agreement being that, botanically, it is not defined by the Arctic Circle. Polunin refers to the "prevailing vagueness and controversy as to what the Arctic really comprises." Each authority has a verbal description that translates to a line on a map, and the composite of these lines is a beautiful image of various wavering arctics garlanding the upper portion of the globe. I follow Polunin's definition, which is the most restricted and is roughly a bit north of the northernmost of these intersecting lines. For this reason and others, though the place is conventionally written as the Arctic, with a capital A, I always refer to it, in deference to these various arctics, simply as the arctic.

Soon after embarking on this search, I began a series of letters to a friend, which he read to small audiences in his distant city.

December 8
Brooklyn

Dear Friend

I've been continuing research on arctic plants for my project that will be called something like *A Voyage Toward the Arctic, Based on the Plants of New York City*. It's a travel book, basically, but I can't go there, or it would be inconvenient to do so at this time, and I'd prefer not to, so I want to travel by finding plants here that grow there. There is some overlap of the flora of the arctic and the flora of New York City, so I'm already partially in the arctic, botanically, and my project will focus on just that part.

I wasn't sure this would work, that there would be enough overlap, but I've found a lot of plants common to both places. I knew there would be mosses and lichens but there are flowering plants too.

My idea is to organize it something like the eighteenth-century floras I've been looking at, like Curtis's *Flora Londinensis*, which is all the plants of the London area. So there would be a pressed plant on the right page and some identification and description and other text about it on the facing left page. This could be quotes about it from writers like Thoreau and Burroughs and from botanists and scientific travelers, and illustrations and other bits I find along the way. Some plants could have more than a two-page spread, some could be represented only by illustrations, the ones I can't find.

My plan is that by spring I'll have a list of plants to find, some familiarity with how they look and when they flower and where I might find them. I'll also be collecting illustrations and quotations. It was hard this year to just pick something and then identify it, so I'm expecting it to be much harder to be looking for particular plants. I'll have to be a diligent botanizer.

The project could take the form of an installation, with my plant presses and mounting paper and tools out on tables, stacks of books, copies of old texts and illustrations, mounted plants and other stuff on the walls, like the room of a gentleman botanist at his country estate.

The essence of the project is expressed in the Rousseau quote I used in *Solvitur ambulando* —

All my botanical walks, the varied impressions made by the places where I have seen memorable things, the ideas they have aroused in me, all this has left me with impressions which are revived by the sight of the plants I have collected in those places. . . . This collection is like a diary of my expeditions, which makes me set out again with renewed joy, or like an optical device which places them once again before my eyes.

The difference is that instead of reminding me of places and experiences that I've had, these plants will call to mind experiences that I haven't had in places I've never been.

December 15

If one were to conceive of the disappearance of all illusions, then consciousness, too, would evaporate down to the level of the plants.

Nietzsche, from his early notebooks

I've been surprised how many of the plants in the arctic are introduced from Europe, weeds mostly, that came over unintentionally with the early settlers. "Introduced" makes it sound intentional but it is mostly not. When John Josselyn was in Maine in the mid-1600s he already had

a hard time saying what was native and what wasn't, and that was only fifty years or so since Europeans settled there. In his list of plants he says

Plantain, which the Indians call English-Man's Foot, as though produced by his treading.

I'm not sure what I expected, not purity exactly, but I thought the harsh conditions would limit the number of new species that could establish themselves. But the European weeds do well there apparently, including the common plantain, *Plantago major*.

One of the eighteenth-century books I've been looking at is *An Arrangement of British Plants* by Withering, an excellent name for someone who picks plants.

January 5

The object of the present little volume is to call the attention of the lover of the works of creation to those floral productions which flourish, in triumph, upon the ruins of a single building.
Richard Deakin, *Flora of the Colosseum of Rome*, 1855

I wonder how Mr. Deakin thought his book would be read? Besides a few introductory pages, it is a list of plants, with the name in Latin, English and Italian, a terse botanical description, a more fulsome and flowery description, and then a little bit about the plant, where it grows or what it looks like or something from its history or naming or its appearance in Ovid or Pliny. Its not the sort of book you would read straight through, cover to cover. I like to think of someone opening at random and taking a little walk wherever the author is at that point. He talks about so many things that it is easy to forget that he is always inside the Colosseum. The book is organized by plant families so any sense of the building and moving through it is very atomized and dispersed. Diderot and I would have organized the book differently, as a walk through the space, encountering plants along the way, but Mr. Deakin had his own very sound ideas.

My reading of the book was different than any previous one, I'm pretty sure. I compared the index to the index in *Circumpolar Arctic Flora* by Nicholas Polunin. When I found a match I checked to see if it was in Clemants, my Northeast guidebook, and if it was I took notes, and photocopied the page if the writing about the plant was good. So the three places — the arctic, New York, and Rome — are linked by the plants and form an arctic unto themselves.

January 9

Withering puts me in mind of other botanists I've been seeing referred to, all with strikingly apt names. The botanical collector Richard Spruce, who explored the Amazon basin and northern Andes, and befriended the doctor of the former President of Ecuador, General Juan Jose Flores. I forget what plant it is but one of them was cited by genus and species and then "Forrest," which means that he collected the first example, the holotype, from which the species was named. It seems too common an occurrence to be mere chance, but it may just be that it is common for English names to be taken from plants and things that happen to them, like withering.

January 10

I've been reading — that is not too strong a word — a book called *Guide to Standard Floras of the World*. The subtitle admirably summarizes its contents — *An annotated, geographically arranged systematic bibliography of the principal floras, enumerations, checklists, and chorological atlases of different*

areas. I've focused on the section called *North Polar regions*. I want to quote the first paragraph but first I want to talk about something I noticed and thought about a few weeks ago but haven't mentioned. When I was reading *Both* by Crase, the botanist, Rupert, is writing about being out on a cold day and says something like "the wind from Poluninland." Very few people could have understood what he meant. My Bible of late, *Circumpolar Arctic Flora*, is by Nicholas Polunin, the recognized authority, along with Hulten, for that region. One further note — at my college the women's dean was Dean Young and the men's dean was Dean Love. So here's the first paragraph —

The southern limits of the Arctic region as delimited for the purposes of this book may, generally speaking, be considered to correspond to the 'tree-line,' except that the Aleutian and Commander Islands as well as Iceland are excluded. These limits, with the exception of Iceland, closely conform with those proposed by Young (see 071). They also are broadly congruent with those proposed by Love and Love (1975), but are wider than those of Polunin (1959; for both references see 050-70); the latter omits most of the partly shrub-dominated 'low-Arctic' subzone. For reasons botanical (trees having once been present) as well as practical, Iceland is incorporated with the rest of Scandinavia (Region 67). Nevertheless, it is recognized that argument continues over delimitations of the Arctic zone. (Takhtajan, 1986, pp 12-15, see General references).

The whole thing is a marvel of terse academic writing at its best. It is by David Frodin of the Royal Botanic Gardens at Kew, and it summarizes every botanical publication on every region in the world. It reminds me of Elsa Allen's *The History of American Ornithology Before Audubon*, which is also beautifully written. One last quote from *Guide to Standard Floras of the World* about an aptly-named botanist —

The Danish interest in Greenland, the *Vega* voyage, and a natural Scandinavian interest in polar regions prompted, at the end of the last century, Eugen Warming in Copenhagen to call for a new *Flora arctica*.

January 16

I've been thinking about the passage I sent you about rare plants apparently gathering around or prospering in proximity to the botanists who can recognize them. It reminds me of various passages about birds wanting to live close to humans. William Bartram wrote, while traveling through uninhabited parts of the Carolinas,

Turkeys, quails, and small birds are here to be seen; but birds are not numerous in desert forests; they draw near to habitations of men, as I have constantly observed in my travels.

Leopardi noticed this too. I love that they think this way. I'm a bit more rational, and agree with Gilbert White when he says

It is, I find, in zoology as it is in botany: all nature is so full, that that district produces the greatest variety which is the most examined.

That makes sense to me. But I could be wrong. Most of the writers I like — not you but the old ones — seem to think so. In "The Return of the Birds" Burroughs writes

There can be no doubt that the presence of man has exerted a very marked and friendly influence upon them, since they so multiply in his society.

I'll keep these writers in mind as I look for arctic plants, and see whether what they say is so. One point in their favor is that I had never noticed any arctic plants in New York, but now that I am learning and looking for them they seem to be everywhere. I assume that they were there before I started looking for them but I'll entertain the other possibility, that they are here *because* I am looking for them.

February 6

There is some question whether *Scutellaria galericulata*, Marsh Skull-cap, is present in the arctic. Polunin doesn't include it but says "it is said to be holding its own following introduction in one locality in southwestern Greenland." That was in 1959. I see three possibilities — it has spread, it has been eliminated, or it is still holding its own in that one locality. I'm partial to the last and will remain so until proved wrong. He reports sightings of plants like this but doesn't include them in his list because he considers them *ephemerophytes*, plants that have been introduced and are growing spontaneously in a limited area but are not stable or widespread enough to be considered naturalized. Sometimes he calls them "mere ephemerophytes" but his tone is generally more even-handed. He doesn't bear them any enmity as intruders, nor does he hold them in especial esteem for surviving in such an unaccustomed country. His true feelings are difficult to guess. It occurs to me that these ephemerophytes are like stranded explorers. Someone should organize a search for them.

February 18

I've been noticing and liking the use of the word "spontaneously" in the titles of various old botany books. John Torrey has a book from 1819, which I haven't seen yet, entitled *A Catalogue of Plants Growing Spontaneously Within Thirty Miles of New York City*. I've been noticing some of these plants but hadn't appreciated their spontaneity. One of my favorite books of late, Richard Deakin's *Flora of the Colosseum of Rome*, is subtitled *Illustrations and Descriptions of Four Hundred and Twenty Plants Growing Spontaneously Upon the Ruins of the Colosseum of Rome*. There are a surprising number of species that are common to the Colosseum, New York, and the arctic, mostly European weeds that have been introduced to New York and the arctic. There are various species of the genus *Stellaria*, named from the Latin *stella*, a star, from the resemblance of the flowers to those heavenly bodies. *Stellaria media*, Common Chickweed or Stitchwort, was named by our friend Withering, the author of *An Arrangement of British Plants*, a book that sounds like a bouquet. Deakin is fond of giving the medicinal and culinary uses of the plants he found in the Colosseum. With a sprinkling of vinegar the entire edifice could be converted to a vast salad bowl. He says of *Stellaria media*

The seeds and leaves of this plant are a favorite food of numerous small birds and poultry; and, in some parts of the continent it is boiled as a vegetable, as a substitute for spinach, and is considered an excellent one.

February 21

I've been writing you of the plants that grow spontaneously in New York and the arctic, and what the botanists have said about them, but I'd like to let the plants speak for themselves and say their names.

Shepherd's Purse
Lamb's Quarters
Common Butterwort
Bog Rosemary
Seabeach Sandwort

Thyme-leafed Speedwell
Greater Celandine
Field Chickweed
Mouse-ear Chickweed
Coltsfoot
Goose-grass
Storksbill
Henbit
Fireweed
Stinging Nettle
Seaside Plantain
Scottish Lovage
Heart-leafed Twayblade

How could a place that contains all these and more ever be called *barren*, unless a page of Shakespeare be called barren too for containing so much white space?

March 3

You are off herborizing in the Encantadas and something you said before you left set me thinking about the famous tortoises there. On an island with taller vegetation the tortoises have longer necks, that was the gist of it. Tonight I pictured you gathering plants on some island, spotting a choice bit of vegetation in the distance and heading for it. Some time earlier a tortoise had seen that same piece of greenery and started toward it. My question is not which of you will get there first. What I'm wondering is whether, in a place so visited and beloved by naturalists, the presence of those naturalists and their activities could exert enough selective pressure to force the tortoises to adapt in some way. Maybe get faster or eat different things or at some other time than usual or in another way. The difference could be slight, that is how these things usually happen, and it would probably go unnoticed. The only way this naturalist-induced adaptation would be noticed would be if there was already a study underway, and I doubt that is the case. So the first thing to do would be to begin one, I don't know how. It would have to be long-term, so it would be best to begin right away. Ideally, someone would have already started — like that tortoise I mentioned earlier — but we can't count on that. So the first thing is to begin. After that, each problem can be faced as it presents itself, chronologically. I don't want to dwell on the difficulties — there will be many — but, to just pick one, the tortoises would have to be studied both with and without naturalists, but how could the naturalists study their own absence? The study would have to include a control group that wasn't studied at all. We have no way of knowing what that group would be like. It would be like an undiscovered island. So, though I'm intrigued by this question of tortoises and naturalists and I think it merits study, I'm not prepared to take it on. Right now you are among the tortoises and could begin immediately but I don't think you should, it would be a mistake, not a mistake for others, I would urge them to do it, but a mistake for you, and for me too. We are speculative naturalists and are ill-suited to the sustained fieldwork that this study demands.

March 7

In your last letter from the Northwest you mentioned that Captain Vancouver had named the spit of land you were exploring. That must have been on his expedition of 1791 to 1795 when he was searching for the Northwest Passage and other things. As fate would have it — I don't believe in chance, as you know — I've been reading the journal of Vancouver's naturalist on that expedition, Archibald Menzies. He dried and pressed plants along the way from California up the coast to Alaska, and transplanted live specimens in specially-made boxes on deck in what he called his "garden." Vancouver was cranky and ill for much of the expedition, sometimes not emerging from his cabin for weeks, and at one point toward the end he threw Menzies' garden overboard, saying that so much weight on deck was unbalancing the ship and making it difficult to manage. I love this explanation because it sounds like an attempt to grapple with psychological motivation using nautical terminology, a promising if neglected field. I believe Melville had something to say on this subject.

April 15

The poets say that April is the cruelest month but it has been kind to the arctic flowers. I found the first one in bloom a week and a half ago along the banks of the Gowanus Canal, at the edge of Lowe's parking lot. It is *Medicago lupulina*, Black Medick, a spreading, clover-like plant with small yellow flowers, very healthy-seeming and vigorous. It looks edible. I found it in my book but wasn't completely sure so I looked for it on the internet and found it in a flora someone had done of the Isle of Skye in Scotland. They said "leaves have a minute point at tip," which I was able to see with my slide loupe. As you know, I want to make a Flora of the Gowanus this year so Black Medick will be the first entry in that also. It will also be in another book I want to do inspired by the indefatigable Mr. Withering and his modestly-titled *An Arrangement of British Plants*. I'll borrow his title for a book of pressed plants that were introduced to this country by the British colonists, intentionally in some cases, unintentionally in others. Though they are called introduced species and they are British, I dare say some of them arrived without a *proper* introduction.

More tomorrow.

April 16

I've spent so long studying the arctic plants this winter and am now living with them flowering at my feet that I no longer quite know where I am, indoors or out, Brooklyn or the high latitudes. *Capsella bursa-pastoris* is in bloom everywhere I am, at the laundromat on the corner, down along the canal. Its common name is Shepherd's Purse, from the resemblance of its triangular seeds to the small bag carried by peasants when they drive their sheep to pasture. Like most of the arctic plants I've discovered, it is edible. Fernald in *Edible Wild Plants* says

The vigorously growing new foliage is sometimes cooked like spinach and, although its turnip-like odor and flavor are disagreeable to some, it is relished by many people.

I haven't tried it and all my specimens are dried but I'll go out and get some so I can give a full report.

Shepherd's Purse
Capsella bursa-pastoris

The name is the diminutive of the Latin for a *box*, and has reference to the form of the fruit.



This is one of the commonest of our wayside weeds,
working its way everywhere with such persistency
and appropriating other people's property so shamelessly,
that it has won for itself the nickname of pickpocket.

Shepherd's Purse is so called because the seeds of it resemble the leathern bagge
wherein Sheepherdes put their victuals.

The young radical leaves are brought to market and sold for greens, in the spring of the year.



Caseweed

Fat Hen

Money Bags

Poverty Purse

Mother's Heart

Bursa Pastoris

Blindweed

Poor Man's Parmacetty

Pickpocket

These herbes do grow
of themselves for the most part,
neere common high waies,
in desart and untilled places,
among rubbish and old walls.



It will flourish and set seed in the poorest soil,
though it may only attain the height of a few inches.

it still survives around the farm sites in Greenland where the Norsemen settled in A.D. 986.



The Irish name of 'Clappedepouch'

was given in allusion to the begging of lepers,

who stood at cross-roads with a bell or clapper,

receiving their alms in a cup at the end of a long pole.

— a little later —

I like it. Cooking is definitely recommended because there are some minute hairs on the underside of the leaf and they make it too abrasive for a salad. I'm going to try some light steaming to wilt them.

— later —

OK, they responded very well and became delicious. A lot of texture — they relaxed rather than wilted — and a very good flavor. Fernald says they can be used as a potherb, which just means they are good to cook and eat.

April 26

April the 11th, 1773

The earth, dear cousin, begins to put on its green robe, the trees to bud, the flowers to open; some are even already past; an instant of delay would be the loss of a whole year for Botany: — I proceed then without farther preamble.

Rousseau, Letters on the Elements of Botany, Letter VIII, Of Making a Hortus Siccus, or Herbarium

I've been thinking about Shepherd's Purse. It is the first arctic plant I found this year, some really tiny plants growing out of sand and gravel along the canal, at the edge of the Lowe's parking lot. They were only about two inches tall but had come up before anything else and produced flowers and seeds. They are also the plant I showed you in front of the laundromat by my apartment. I see them everywhere I go now. As I mentioned in an earlier letter, they make a pleasing alternative to spinach. I've seen them in a variety of situations and they seem to take on different forms. I noticed that I was beginning to have fond feelings for the plant and wondered why that would be. I think it's a growing admiration for their variability. Where is Whitman, I wonder, so he can begin to describe this plant?

May 6

I've been trying to collect my thoughts on clouds and have continued to collect the arctic plants. I was riding home two weeks ago and saw a bit of color right before the Third Street bridge over the canal, and it turned out to be the purplish tiny flowers of *Erodium cicutarium* covering a strip about three feet wide and ten feet long. It grows along the ground, sending out shoots that root themselves, so it tends to form carpets, and has frilly leaves like a carrot's. After the flowers mature and die they bend down on their delicate stalks and the central spike inside the flower grows really long and pointy, giving the flower its English name, Storksbill. The crooked stems and flower parts really do look like the neck, head and bill of a stork. Fernald says that it can be used as a salad and potherb, and that it is in the Geranium family. Gerard, in his justly-famous Herball of 1597, says

It is found neere to common high waies, desert places, untilled grounds, and specially upon mud walls almost every where.

He has much to say about its healing properties in the section called The Vertues, ending with and the decoction of the herbe made in wine prevaieth mightily in healing inward wounds, as my selfe have likewise proved.

I've been trying for years to heal my inward wounds with wine alone, and its relatives beer and whiskey, but to no avail. Perhaps the addition of Storksbill will ease the pain.

May 7

I've been returning to the same places for the past few weeks so I've seen plants emerge and start to develop flowers. There are a few things right now that have the beginnings of flowers so I keep checking on them and noting their progress. They are doing well and I feel proud that they've come so far. I've begun to care for them. In anthropological terms I'm in transition from hunting and gathering to an early form of farming. There's a spot in Lowe's parking lot near the canal that is like a nursery for wild plants, weeds mostly, and I've been following a clump of hirsute plants with pointy oval leaves that have sent up tall shoots with a cluster of buds on top of them. It looks like the flowers will be yellow but I can't find it in my book. I went to check on it today and someone had thrown a large cardboard box on top of the plants, crushing all but one of the shoots. I'm enclosing one of the broken ones and propped up the rest and think they will be alright. Now that I think of it the plants will be fine. I'm worried about getting a good specimen.

May 8

I've noticed something curious. When I tell people I'm collecting arctic plants, after they absorb that they are growing here in New York they sometimes say "And you're collecting them *now*!" They seem to assume that the arctic plants grow in winter, the most arctic time, unlike all the plants they know. The plants there — so their reasoning must proceed — must be so well adapted to that climate that not only do they survive the cold and dark of winter but this must be the time when they are most vigorous and abundant. I'm tempted to tell them about arctic summer, that as cold and dark as they imagine winter there, it is warm and light in the opposite season, and that their temperate thoughts have no bearing on life at the poles. But I say none of this. Though the arctic plants don't bloom in winter, why shouldn't they? Could it be wrong to imagine something so beautiful? If it is a misunderstanding, which it certainly is, then it is one I'd like to share. I'll add it to my own.

May 16

I'd like to say a word for Common Groundsel. Perhaps its commonness is the reason it is commonly overlooked. I doubt if anyone has ever carried home a bouquet of it. Yet I've grown quite fond of this homely plant. It is one of the first arctic plants I found this spring. Clematis says it blooms all year and I don't doubt it, it has that look, a tight-lipped aspect that should carry it through the fall. Linnaeus named it *Senecio vulgaris*, *senex* being a Latin old man, a vulgar or common one. Gerard said "Groundsel is called in Latine, *Senecio*, because it waxeth old quickly." That doesn't sound right to me. I prefer what Mrs. William Starr Dana said in *How to Know the Wild Flowers* —

The generic name is from *senex* — an old man — alluding to the silky down of the seeds, which is supposed to suggest the silvery hairs of age.

But it is more than just the flowers. Botanists refer to the habit of a plant, its general look and bearing, how it carries itself, and for me this plant is tough and a bit crooked and stiff, suggestive of an old man leaning on his stick.

Groundsel
Senecio vulgaris

from *Senex*, an old man, in reference to its downy head of seeds



The name Groundsel is of old origin,

being derived from the Anglo-Saxon *grundeswelge*,

meaning literally, 'ground swallower,'

referring to the rapid way the weed spreads.

It grows chiefly upon stone walls unmortared, & about townes.

Groundsel is called in Latine, *Senecio*, because it waxeth old quickly.



For wounds, though they be old.

Grundy Swallow

Groundswel

Ground Glutton

dens leonis

Leontodon

dent de lion

dandelion

tooth of the lion

It grows almost every where in Fallow Ground, & flowers most Months in the Year.

makes an early salad, long before anything can be produced in the gardens



Dandelion
Taraxacum officinale

The name of the genus, *Taraxacum*, is derived from the Greek *taraxos* (disorder), and *akos* (remedy), on account of the curative action of the plant.

Dandelion, with globe of down,
The schoolboy's clock in every town,
Which the truant puffs amain,
To conjure lost hours back again.

Its flowers, which close and open at a certain hour, are the solitary shepherd's clock,
and its feathery globes are his barometer, predicting calm or storms.

each little feather is charged with a tender thought,
and conveys its secret messages to the dear one's feet,
when they are carefully blown, on their aerial voyage,
in the direction in which she dwells.

It is said that its use for liver complaints was assigned to the plant
largely on the doctrine of signatures, because of its bright yellow flowers of a bilious hue.

They are found often in meadows neere unto water ditches,
as also in gardens and high wayes much troden.

One O'Clock

Clock Flower

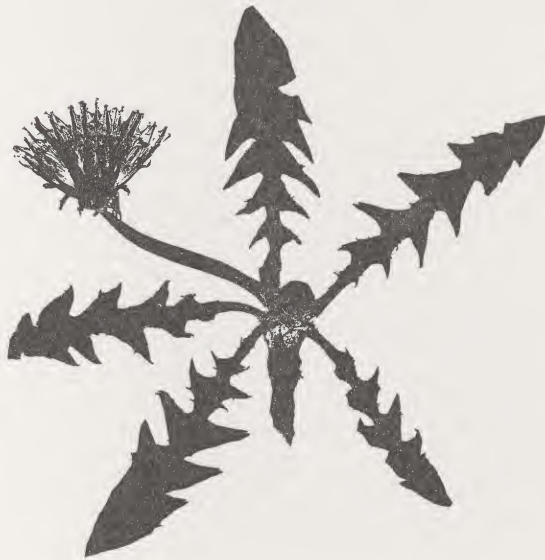
Time Flower

Clock

Old Man's Clock

Tell-Time

What O'Clock



May 23

I had prepared myself for adversity — every arctic botanizer must — but the latest bout has hit me hard. In an earlier letter I wrote you about the plants I was caring for in Lowe's parking lot, how they had been crushed by cardboard and I had freed them and straightened them as best I could and was hoping to see them blossom soon. They had tall single stems with curled-up buds of flowers that I thought would be white or light yellow. I went there the other day and the whole area had been stripped down to the ground, not a blade of grass standing. You would never have known that there were ever so many plants there. It just looked dusty. The bastards. I haven't seen those plants anywhere else. The trash was still there, just torn up. The same thing happened at Third Street Bridge. It felt like the same people had done it. That's where I found the *Erodium cicutarium* or Storksbill I sent you. Whatever those people, the plant killers, hoped to accomplish, it will be blighted and not come to fruition. They may not see another spring. Their death could happen at any time, and when they are put in the ground they won't be coming up again. Not in this world. But the plants won't die, they've stored up strength in their roots, and I am undeterred.

May 24

It made me mad that those people tried to kill the plants. Not for the plants' sake, they'll be back, and not for me, I'll find others, but for us as a species. It doesn't speak well for us. The other animals can't be proud of what we've done. It can only add to the unease they feel having us among them. We can do better than this, be better than this, and I want them to know this.

Perhaps this is the moment to reintroduce something that was long sought for but is rarely spoken of today. I'm referring to the souls of plants. Theophrastus, following his mentor Aristotle, thought of plants along the analogy of animals and came up with the concept of plants as animals with their feet in the air and their mouths in the ground. A useless, even damaging concept, I think, but a striking image, I think you'll agree. He worked out all the correspondences — roots are mouths, stems legs, etcetera — but he was troubled about the location of the plant's *psyche* or soul. Following a train of logical deduction he finally concluded that the soul of a plant is located at the juncture of its root and stem. I haven't been able to see it, even under magnification, so I'm sending you a specimen of white clover in the hope that your observations, and your consultations with like-minded scholars, can resolve this matter.

* * * * *

That was the last arctic letter. The seasons since have passed in succession, with their disappointments and discoveries. The plants at Lowe's parking lot and Third Street Bridge rebounded — I picked a few — and then were killed with herbicide, leaving only the trash again. It really does seem to be the same people doing it. Between those two sites was what became my favorite place to botanize, a vacant lot surrounded by a high fence, adjacent to a cement plant, with a view down to the canal. The fence was covered with dark fabric so, once I had slipped inside, I couldn't be seen, though I could hear people walking on the sidewalk just a few feet away. The lot had obviously been left alone for years because a variety of plants had established themselves, arctic and otherwise. There was White Campion, Common Milkweed, Red Clover, Bindweed, Yellow and White Sweet-clover, and False Foxglove, and, of the arctic plants, Mugwort, Cleavers, Shepherd's Purse, and White Clover. But like the naturalist Menzies' garden aboard Captain Vancouver's ship, like Eden itself, this garden flourished for a while — spontaneously and in triumph, as the author of *The Flora of the Colosseum* would have said — and then was destroyed. Bulldozers scraped away the plants and it became a parking lot for cement trucks.

I love to muse o'er meadows newly mown,
Where withering grass perfumes the sultry air,
Where bees search round with sad and weary drone,
In vain, for flowers that bloom'd but newly there.

John Clare

Mugwort
Artemisia vulgaris



Apple-Pie

Dog's Ears

Felon Herb

Fat Hen

Sailor's Tobacco

Old Uncle Harry

The *Mater Herbarum* or Mother of Herbs

The Names

Mugwort is called in Latine, *Artemisia*, which name it had of *Artemisia* Queene of Halicarnassus, and wife of noble *Mausolus* King of Caria, who adopted it for her owne herbe.

The common Mugwort groweth wilde in sundry places

about the borders of fields, about high waies, brooke sides, and such like places.

The Place

Both in England and abroad, Mugwort spread happily, also, from the verges into the bomb sites.



In the Middle Ages, the plant was known as *Cingulum Sancti Johannis*,

it being believed that John the Baptist wore a girdle of it in the wilderness.

The Vertues

Pliny saith, That the traveller or wayfaring man that hath the herbe tied about him
feeleth no wearisomnesse at all; and that he who hath it about him
can be hurt by no poysonsome medicines, nor by any wilde beast,
neither yet by the Sun it selfe.

Providence has placed it everywhere about our doors;
so that reason and authority,
as well as the notice of our senses,
point it out for use.

yf it be within a house there shall no wycked spyрте abyde



Artemisia vulgaris

Far from discouraging me, the razing of this garden, which had become a sort of home for me, only confirmed what I had long felt, that the arctic — in particular the arctic here in New York, what I call *the near arctic* — is my true environment. And I'm not alone in feeling this. In the famous epistolary work *Letters from an American Farmer* (1782) by J. Hector St. John de Crevecoeur, the farmer, James, dramatizes this feeling when he opens his last letter with

I wish for a change of place; the hour is come at last that I must fly from my house and abandon my farm! But, what course shall I steer, inclosed as I am? The climate, best adapted to my present situation and humour, would be the polar regions, where six months day and six months night divide the dull year: nay, a simple Aurora Borealis would suffice me, and greatly refresh my eyes, fatigued now by so many disagreeable objects. The severity of those climates, that great gloom, where melancholy dwells, would be perfectly analogous to the turn of my mind.

The advantage — and it makes me happy despite the great gloom where melancholy dwells — of my penchant for mental travel to the near arctic is that the far-off place analogous to the turn of my mind is always close at hand. This mode of transportation was familiar to Emily Dickinson, who wrote to a friend

My flowers are near and foreign, and I have but to cross the floor to stand in the Spice Isles.

This mental travel, this transport to the landscape and climate that corresponds to my thoughts and feelings, can come about by thought alone, but objects seem to help, like Dickinson's flowers. Objects can contain thoughts and feelings, and they can be a prompt to the imagination and its vehicle, as Rousseau so beautifully expresses in the passage quoted earlier —

All my botanical walks, the varied impressions made by the places where I have seen memorable things, the ideas they have aroused in me, all this has left me with impressions which are revived by the sight of the plants I have collected in those places. . . . This collection is like a diary of my expeditions, which makes me set out again with renewed joy, or like an optical device which places them once again before my eyes.

On a cruise along the coast of Alaska aboard the research ship *Corwin* in 1881, John Muir made a similar observation of the ability of the arctic plants to transport their viewer to distant places.

In general the physiognomy of the vegetation of the polar regions resembles that of the alpine valleys of the temperate zones; so much so that the botanist on the coast of Arctic Siberia or America might readily fancy himself on the Sierra Nevada at a height of ten to twelve thousand feet above the sea.

The botanists, in discussing how the arctic plants survived the most recent Ice Age, when most of the arctic was buried beneath miles of ice, write about certain areas within the arctic that remained ice-free in summer, which they call *refugia*. Some of the arctic plants were able to survive there, and as the climate warmed they spread from those refugia to recolonize the arctic. I love the idea of the arctic plants, through all the cold years, huddled together in those safe havens. I live near the Gowanus Canal, one of the most polluted waterways in the country, and I've noticed that arctic species seem to thrive along its banks, as if there is some secret sympathy between these seemingly harsh places. Like the refugia that harbored the arctic plants, the banks of the canal have become for them a harbor and refuge and nursery. If we reflect that the current warming of the planet mirrors the end of the last Ice Age, we can expect that, when conditions are right, these plants too will venture from their haven here in search of a new home. Some may have already set out.

As if some little Arctic flower
Upon the polar hem -
Went wandering down the Latitudes
Until it puzzled came
To continents of summer -
To firmaments of sun -
To strange, bright crowds of flowers -
And birds of foreign tongue!
I say, As if this little flower
To Eden wandered in —
What then? Why nothing,
Only, your inference therefrom!

Emily Dickinson



Marsh Marigold
Caltha palustris

Meadow Bright

King-cup

OE *marsc meargealle*

Caltha

From the Greek, *kalathos*, a cup;
in allusion to the form of the flowers.

They ioy in moist and marish grounds, and in watery medowes.

hath great broad leaves, somewhat round, smooth, of a gallant greene colour
sleightly indented or purld about the edges
among which rise vp thicke fat stalkes, likewise greene
whereupon doe grow goodly yellow floures, glittering like gold



Touching the faculties of these plants, wee haue nothing to say,
either out of other mens writings, or our owne experiences.

Cleavers
Galium aparine



Goose-grass

Catchweed

Grip Grass

Barweed

Mutton Chops

Beggar's Lice

Everlasting Friendship

Clevers and Clavers, are under the Moon.

Hedgeheriff

from the Anglo-Saxon 'hedge-rife,' meaning a
taxgatherer or robber, from its habit of plucking
the sheep as they pass near a hedge.



This plant was called by the Greeks, *Philaethron*, from an idea which they entertained, that the
ready manner in which the seeds attached themselves to our habiliments,
was owing to their love of the human species.



OE *clife*, claw

Women do usually make a pottage of Cleuers

with a little mutton and otemeale,

to cause lankness, and keep

them from fatnesse.

the tender Winders,

with young Nettle-tops,

are us'd in Lenten Pottages.

The roots will dye red,

and if eaten by birds

will tinge their bones.



Its flowers, which appear in summer,

are rather inconspicuous, one's attention being

chiefly attracted by its many whorls of slender leaves.

This process of wandering and settling and wandering again has been happening all along. The Englishman John Josselyn visited our coast from 1638 to 1639, and then again from 1663 to 1671, and he published an account of his travels, *New-Englands Rarities Discovered*, in 1672. Even at this early date, he wasn't completely sure which plants were native and which were introduced, but under the heading "Of such Plants as have sprung up since the English Planted and kept Cattle in New-England," he lists twenty-two recent arrivals, including the arctic plants Shepherd's Purse, Dandelion, and Groundsel. As an illustration of the migratory habits of these plants, they are also found in Richard Deakin's *Flora of the Colosseum of Rome* (1855), which lists the four hundred and twenty plants he found growing in the ruins of that ancient amphitheater. For Nicholas Polunin, the question of what had just wandered in and what had truly settled was key to establishing a comprehensive flora of the arctic, and in order to decide difficult, liminal cases he established a special category for recent and very localized arrivals that he thought might not persist, which he called *ephemerophytes*. On this same question and echoing my own view, Henry David Thoreau wrote of the plants he saw around Concord "I know of no mark that betrays an introduced plant, as none but the gardener can tell what flower has strayed from its parterre; but where the seed will germinate and the plant spring and grow, there it is at home." So, despite an air of native purity, the history of the arctic plants of New York City is mostly a story of immigration and naturalization, of plants emigrating from Europe and finding a new home elsewhere, and in this it mirrors the history of our teeming city and nation. It is tempting to imagine these plants arriving in New York Harbor in colonial times, finding a foothold in this new world, and slowly, over the generations, moving ever north until they reach the arctic. Some would surely die along the way. Others would make it to the arctic only to perish there. And some of these explorers would survive and spread across the vast open spaces of the arctic and become settlers and live there still.

The waxing and waning of the most recent Ice Age was a long process, of course, and most plants wandered south as the ice advanced and back north as it retreated, but some of them just waited it out where they were. When I think of those plants that waited rather than wandered, they call to mind what writers in the eighteenth century called the Sleep of Plants. Perhaps as a lingering echo of Theophrastus's idea of the plant as an animal, they were fascinated by any unplantlike behavior by plants, such as movement and sleep. White Clover is a good example of this. At night, and when the day is dark and rainy, the plant will fold up its leaves and wait for the sun to return. The same with the golden petals of Marsh Marigold, which fold in on themselves late in the day and only wake the next morning when they are touched by the sun. Sometimes when I wanted to pick and press them, if I got there late in the day or it was overcast, I'd find them closed up, and I too would have to wait for the return of the sun. There is a certain simple beauty in the current scientific explanation for this — protecting the flowers and leaves from rain, wind, and insects, and conserving warmth — but earlier writers saw that these delicate plants, like a tired botanist at the end of a long day in the field, evidently needed the rest that only sleep can provide. And it is a short step from the Sleep of Plants to the long sleep of death, which is sleep's older sister, as Dickinson might have said.

John Muir picked up on the arctic plants' habit of sleep and death, and its apparent life-giving properties, when he reported from Alaska that

the plants are solidly frozen and buried for nearly three fourths of the year. In this condition they enjoy a sleep and rest about as profound as death, from which they awake in the months of June and July in vigorous health, and speedily reach a far higher development of leaf and flower and fruit than is generally supposed.

In the travel accounts of Muir and others, there is often a delightful blurring of the distinctions between physical and mental travel, a sliding from one to the other and back. We can see an analogue to mental travel, and a vivid example of this blurring and sliding, in the unusual optical effects that are often witnessed by travellers in the arctic. The Novaya Zemlya effect was first reported by an expedition in search of the Northeast Passage that became icebound and was forced to spend the long, dark winter of 1596 on the arctic island of Novaya Zemlya. In the spring they reported seeing the sun reappear two weeks earlier than expected at that latitude. This was caused, not by their anticipation, which must have been keen, but by a temperature inversion, the cold air on the surface of the sea causing the light to bend away from the warmer air above and follow the curve of the earth, delivering them a much-welcome image of the sunrise. Though it has a simple physical explanation, it feels like it was produced by their collective imagination and yearning, and as such is a form of mental travel, a seeing of images that are over the horizon, like my experience here in New York with the arctic plants, which are as real to me as that arctic sunrise. This effect is what is commonly called an illusion, an optical illusion, but it is an uncommonly real and grounded one because it is an illusion that presents a reality that is elsewhere.

Related effects of the raising, stretching, and compressing of images, what sailors have traditionally called looming, towering, and stooping, are commonly reported by sailors at high latitudes. In 1879, the research ship *Jeannette* set out to sail and steam to the North Pole, and to gather scientific observations along the way. If they had returned to write an account of their voyage, they could have borrowed the title of Constantine Phipps's account of a similar attempt in 1773, *A Voyage Towards the North Pole*, with *Towards* being the operative word, as it indicates an inclination or orientation and nothing so definite as an arrival at that destination. When Muir embarked two years later on the cruise of the *John Corwin*, one of their goals, aside from scientific exploration, was to look for the *Jeannette*, which had not returned. Muir saw no sign of the *Jeannette* but he witnessed fantastic displays of high latitude optical effects. From the deck of the *Corwin*,

Islands and headlands seemed to float in the air, distorted into the most unreal, fantastic forms imaginable, while the individual mountains of a chain along the coast appeared to dance at times up and down with a rhythmic motion, in the tremulous refracting atmosphere.

Conditions in the arctic — cold, stillness, a far horizon — encourage these unusual optical effects, but a degree of illusion is at the heart of every perception, as writers through time have suggested. In the *The Moral Essays* (1827), Giacomo Leopardi argued against "that miserable and frigid truth," which he considered correct but too grim to be endured, and encouraged instead "those opinions, albeit false, that give birth to thoughts and deeds that are noble, strong, magnanimous, virtuous, and conducive to the public and to the individual good; those beautiful and happy imaginings, although unreal, that give price to life, the natural illusions of the mind." This idea of the necessity of illusion, what could be called the reality of illusion, was taken up by Friedrich Nietzsche in his early notebooks, where he says "life requires illusions, that is, untruths that are held to be truths." These untruths or half-truths or illusions are all the reality we have access to, and they are the material from which we construct our perception and understanding, and thus, as he writes later in the notebooks, "If one were to conceive of the disappearance of all illusion, then consciousness, too, would evaporate down to the level of the plants." I detect here a hint of longing for this evaporation, for this simple plant consciousness, but may simply be projecting my own desire. The way back from this plant consciousness — the way up, Nietzsche would have said — is through the acceptance and artful deployment of illusion, or as he concisely put it, "Due to the superficiality of our intellect, we do indeed live in one ongoing illusion: that means that in every moment we need art in order to live."

Henbit
Lamium amplexicaule

amplexicaule, with leaves clasping the stem

The name, which occurs in Pliny, is said to be derived from the Greek word for a *throat*,
in allusion to the shape of the corolla-tube.

Our experiment shows it to be good when boiled
and, when young in earliest spring,
to be a pleasant nibble in the raw state.



it is an annual or winter-annual
having the leaves orbicular
or round-ovate to reniform,
crenately incised, pilose above,
the large upper ones
being sessile and clasping

Its red velvet tip is a beautiful object, and marks the plant at a distance.



Pollen of a vermilion hue.

It grows with us frequently on walls.

White Clover
Trifolium repens

trifolium is *three leaves*, *repens* is *creeping*

In the urban environment it is common along roadway margins, stone walls, and rock outcrops;
and in vacant lots, rubble dumps, and urban meadows.

has become established in waste or pastured areas following introduction in West Greenland

I will enchant the old Andronicus
With words more sweet, and yet more dangerous,
Than baits to fish, or honeystalks to sheep.

Bee-Bread

White Trefoil



Dutch Clover

Honeystalks

Pussy Foot

Lamb-Sucklings

Honeysuckle Clover

The Druids held clover in high repute, deeming it, it is supposed, a charm against evil spirits.

Woe, woe to the wight who meets the green knight,
Except on his faulchion arm,
Spell-proof, he bear, like brave St. Clair,
The holy trefoils charm.

it is said to be noisome to witches

clover-tea, made by brewing the dried flower-heads, is esteemed a wholesome and supposedly medicinal drink.

It signifies in

The Language of Flowers

Think of me

Promise

Hope was depicted by the ancients
as a little child standing on tiptoe,

and holding one of these
flowers in his hand.



There is a similar embrace of illusion and the formative power of art in Charles Baudelaire's review of the Salon of 1859, where, after criticizing the realist painter for "painting not what he dreams but what he sees," he writes

I would rather return to the diorama, whose brutal and enormous magic has the power to impose a genuine illusion upon me! I would rather go to the theatre and feast my eyes on the scenery, in which I find my dearest dreams artistically expressed, and tragically concentrated! These things, because they are false, are infinitely closer to the truth; whereas the majority of our landscape-painters are liars, precisely because they have neglected to lie.

I completely agree with Baudelaire, but when he criticizes the realist painters by saying "they open a window, and the whole space contained in the rectangle of that window — trees, sky and house — assumes for them the value of a ready-made poem," I completely agree with them too. I accept that my consciousness is largely made up of my projections and is a series of illusions and approximations, and that my experience of a plant, for example, mostly comes from me rather than the plant. Rousseau touches on this when he says that the plants he pressed contain the impressions he has stored in them, and these impressions can be unlocked by viewing them again. But are there thoughts and feelings in the plants, accessible to me, that I haven't put there? Am I only meeting myself in them, or am I also meeting them?

Though I don't agree, I'm attracted to writers who think it all comes from me. To just briefly run through a few quotes, which don't capture the whole of their thought but represent their tendency, Ralph Waldo Emerson wrote "A noble doubt perpetually suggests itself . . . whether nature outwardly exists," Baudelaire wrote "If an assemblage of trees, mountains, water and houses, such as we call a landscape, is beautiful, it is not so of itself, but through me, through my own grace and favour, through the idea or the feeling which I attach to it," and, with odd appropriateness to my arctic research, John Ruskin wrote, in the most extreme and beautiful expression of this tendency, "Therefore it is that all the power of nature depends on subjection to the human soul. Man is the sun of the world; more than the real sun. The fire of his wonderful heart is the only light and heat worth guage or measure. Where he is, are the tropics; where he is not, the ice-world."

These strong expressions, though untrue in themselves, make me aware of my own position in the tense, unresolved middle, not sure where I end and the plants begin. In all my collecting of plants and texts, there is an aspect of seeking for parts or moments of myself that have been dispersed in the world, a recovery or recognition of my inner world in the outer world, where I have been scattered *broadcast*, as Thoreau might have said. So much of what I hope to express has already been written by others, oftentimes feelings and thoughts that were hidden in me or only dimly descried before I read and recognized them, that I've often had recourse in this book to expressing myself through those thoughts and feelings that are the originals of my own. In the same way, I've found my present place — New York City, Brooklyn, Carroll Gardens, along the Gowanus Canal — in other places — the arctic, the Colosseum, England — and in other times. I've gathered together these various experiences and projections and illusions of plants and places, my own and others', and want to go under their spell for a while, to inhabit and live them as if true. This acceptance of illusion as reality while recognizing it as illusion, and the desire to use illusion productively, is connected to Samuel Taylor Coleridge's requirement for reading fiction, "that willing suspension of disbelief for the moment, which constitutes poetic faith", and John Keats's idea of "Negative Capability, that is when man is capable of being in uncertainties, Mysteries, doubts, without any irritable reaching after fact & reason." The beauty and utility of both ideas is that they open up a space where overlapping realities are possible without having to be reconciled. I've tried to make this book just such a space, where, through gathering and arranging plants and texts, the plants are revealed at the same time as I reveal myself.

What I'm aiming for is the instrumental use of illusion, that is, using untruth to move toward truth. Erasmus Darwin expressed this idea when he began *The Botanic Garden* (1789), his explication in verse of the Sexual System of Linnaeus, with the words "The general design of the following sheets is to inlist Imagination under the banner of Science," which could be an epigraph to the present work. As a model of the utility of illusion, it is interesting to look again at the mirages and optical illusions of the arctic, which have been useful to natives and travellers there because they can bring into view distant features of the landscape that would not normally be visible. In one common illusion, a stretch of pack ice intersected by dark leads of open water, though far out of sight, can be seen as light and dark streaks shooting up from the horizon. Sailors have navigated toward these dark streaks, knowing that they indicate open water over the horizon, and walkers on the ice have avoided them, following instead the bright streaks over continuous pack ice, both parties using the unreal as their map of the real and enlisting illusion as their guide.

I've used earlier botanical writings in a similar fashion, finding that their mix of observation and superstition is suggestive for my own thinking. This is particularly true for sixteenth- through eighteenth-century herbals, which give the names, locations, history, and uses of medicinal plants. As medical books, they want to sort out effective cures from inherited superstitions, but they are early in this process and preserve an intricate interweaving of the verifiable and the imagined. Many of the "Vertues" they list, the medicinal uses, are derived from the Doctrine of Signatures. In this ancient idea, found in Dioscorides and Galen, revived in the Middle Ages by Paracelsus and Böhme, the shape, color, taste, or other attribute of a plant, or its place of growing, is an indication of its use in healing. The whiteness of the flowers of *Eupatorium perfoliatum*, for example, indicates that it is good for healing broken bones, as is seen in its common English name, Boneset. Rattlesnake Plantain, with mottled leaves like the pattern on a rattlesnake, is an antidote to the bite of that snake. The liver-shaped leaves of Liverwort indicate it is sovereign for the liver. The various Buttercup species in the genus *Ranunculus*, from the Latin *rana*, a frog, which like to grow in moist situations, such as the edge of swamps, where warty frogs and toads also dwell, are deemed to be useful for treating warts. These attributes or signatures were seen as being placed there by God as signs to us. On an earthly level they point us to practical cures, and on a higher, metaphysical level they indicate God's evident love and care in the creation of nature and the placing of us over nature as its interpreter, which provides us a path that leads back to Him. The early American preacher Jonathan Edwards expressed this succinctly when he wrote "The works of God are but a kind of voice or language of God to instruct intelligent beings in things pertaining to Himself." Ralph Waldo Emerson continued this line of thought when he wrote in his essay "Nature"

The use of natural history is to give us aid in supernatural history; the use of the outer creation, to give us language for the beings and changes of the inward creation. . . . It is not words only that are emblematic; it is things that are emblematic. Every natural fact is a symbol of some spiritual fact. Every appearance in nature corresponds to some state of mind, and that state of mind can only be described by presenting that natural appearance as its picture.

As a late example of this tradition, John Ruskin, writing in the mid-nineteenth century, had a deep belief in the moral instructiveness of all lifeforms, what he called their "lesson." Only plants that were "truly drawn," which meant they corresponded to his experience and his field guide, were able to impart their lesson, and he used this as a test of a painting's truth and value. Most paintings and painters failed this test by being too general and stylized, and Ruskin was equally critical of the "mere botanist," who looks at a flower and "counts the stamens, and affixes a name, and is content." In contrast, the true painter, when he depicts a particular flower, considers "each of its



Sheep Sorrel
Rumex acetosella

Lower leaves lanceolate-hastate,
the lobes entire, acute;
flowers dioecious;
inner sepals without
tubercles, ovate, entire.

Radix perennis, sublignosa, repens, fusca.

Root perennial, of a brown color, somewhat woody, and creeping.

Heaths – sandy Fields – dry Pastures

The name is the ancient Latin one, and, being the word for a *pike* or a type of *lance*, probably alludes to the form of the leaves in some species of sorrel.



attributes as an element of expression. Thenceforth the flower is to him a living creature, with histories written on its leaves, and passions breathing in its motion."

I love the image of Ruskin strolling through a museum as if in a field, guide in hand, botanizing in the paintings, and it sends me off in thought on a similar botanical excursion to the near arctic. At the Albertina in Vienna, standing in front of Albrecht Durer's watercolor *The Large Turf* (1503), I discover, amidst a host of wayside weeds, the arctic plants *Ranunculus repens*, Creeping Buttercup, and *Taraxacum officinale*, the Common Dandelion. And at the Cloisters, closer to home, in the famous cycle of tapestries that depict the hunt for the unicorn, which, like most of my arctic plants, has made its way from Europe to become naturalized in New York, the ground is carpeted with a complex interweaving of recognizable, and probably symbolic, wildflowers, including my arctic companions White Clover, Mugwort, and the familiar Common Dandelion.

The last arctic plant I collected was *Rumex acetocella*, called Red Sorrel or Sheep Sorrel or Field Sorrel, a tough, delicate little plant that Frederick Martens found growing wild on the arctic island of Spitsbergen when he accompanied a whaling expedition there in 1671. In the spirit of Ruskin and the Doctrine of Signatures, this plant seemed to be teaching me a lesson, though I didn't know what that lesson was.

When I first found and pressed it a few years ago, at Plumb Beach on Dead Horse Bay in the farthest reaches where Brooklyn meets the sea, there were many green, low-growing plants and a few with tall spikes of tiny flowers and intense crimson leaves. The crimson plants were in drier, more exposed situations, growing out of pure sand, and I thought this must have encouraged them to turn red early, with the others to follow later. I usually note the date when I press a plant but didn't in this case, so when I went back to collect the plants for this book I wasn't sure when to look for them. By late August, when I checked on them for the first time, only a scattering of leaves had turned. A few plants had obviously flowered and withered earlier but I didn't give them much thought as I gathered whatever red leaves I could find and resolved to come back in a few weeks, when the rest of the plants would surely be starting to turn. I didn't want whole plants with roots — there weren't enough for me to be picking them in multiple without damaging the population — but I thought it would be easy enough to find upper, lance-shaped leaves with spurs — the lower ones are usually rounded, without spurs — that had turned completely red. But the situation was the same when I went back in September and all through October. It was a dry late summer and fall, which should have stressed them into turning, though it stayed pleasantly warm, which might have postponed their turning. I had various thoughts and theories but really didn't know why they were staying green. There was a cold snap in early November, just about freezing, and I couldn't get out there right away, so I thought they might all turn and fall off in a week, but when I got there in mid-November, and again at the end of the month, it was exactly the same, with just a few red leaves on the smallest plants.

Considering how much time and effort went into collecting the few examples you see here, the botanist Merritt Lyndon Fernald seems to be taunting me, as well as boasting, when he writes of this plant "A small amount of the fresh leaves makes an unusual seasoning for fish, rice, or potatoes, or mixed with other salads." The lesson here must be *This too must be endured*. In the face of such mocking of my high-minded yet useful project, I'd like to defend myself, as well as enlighten the reader, by turning to the introduction to Frederick Hanham's *Natural Illustrations of the British Grasses* (1846), which gives a rousing recitation of the adversities he faced and overcame in his similar project —

With respect to the Illustrations, or Dried Specimens, the most responsible and difficult part of the work, and upon which its success entirely depends, the Editor would simply call the attention of the reader to the great difficulties and labour attending its execution, when it is considered that the edition of this work requires no less than 62,000 plants to be collected and prepared; in addition perhaps to at least half as many more culled to obtain that number of successful specimens. It should also be borne in mind, that the Collector has had to contend with every adverse circumstance of weather; and the scarceness of some of the species rendering it necessary to extend his researches to a considerable distance. Add to this, the brevity of the season in which all these were to be collected and prepared; and lastly, though not least, the difficulty which will probably be acknowledged by every practical Botanist, in distinguishing and preventing any of the species being erroneously named, or misplaced, in the collection and preparation of so great a number; and it will be perceived that the undertaking must have involved no slight or ordinary anxiety and exertion. The task has now, however, been accomplished, under all these acknowledged difficulties; and it is hoped not without such a degree of success as will secure the approbation of a discerning and intelligent public.

I take a similar inspiration from Carl Peter Thunberg, one of Linnaeus's disciples, who travelled to Japan in the 1770s to search for plants. Like all foreigners, he was confined to a small artificial island in the bay of Nagasaki and not allowed into the countryside, but, by patiently sorting through the fodder brought in for the cattle, he found many rare and beautiful plants.

So, braced by the silent call of these two botanists to *Persevere*, I'd like to return to my search for the last arctic plant, whose lesson seems to have been *Pay attention*. It turned out the clues were there for me to follow. The earlier red plants that I picked and pressed had all flowered, and Deakin said of this plant "becoming, after flowering, a deep crimson colour." That was the first important clue, and the second was when I learned that red sorrel is dioecious, meaning that it is unisexual, with each plant being either male or female, unlike most plants. In light of that, if I reimagine this past growing season, what I think happened is that in the summer, unobserved by me, the female plants bloomed, turned red, and withered, leaving me to watch and wait through late summer and fall for the male plants to turn completely, which they were never going to do. At the end of the season, just before winter, I found instead, by crawling around on hands and knees and looking closely, another form of this plant that silently spoke to me, with small roots and tiny red leaves.

This small plant is like a word or phrase that leads me back to the ideas around the Doctrine of Signatures. My attraction to the tradition of the Doctrine of Signatures, and its usefulness to me, is that it makes explicit and visible something that is implicit in all my arrangements of plants and texts, the idea of plants *as* texts. There is a long tradition of imagining that the plants are speaking to us directly, and I love this notion and want to encourage it. In the seventeenth century, Sir Thomas Browne, a model of passionate inquiry and collection, made this scholarly and slightly sceptical reference to the hyacinth, which is said to record, in Greek, of course, Apollo's lament for the death of Hyacinthus —

Some find Hebrew, Arabick, Greek, and Latine Characters in Plants; In a common one among us we seem to read *Aiaia, Viviu, Lili*.

And in the nineteenth century, before this tradition passed out of the popular imagination, it was fashionable to communicate through the Language of Flowers, in which each flower had a defined meaning — White Clover meant "Think of me" and "Desire of riches" was signified by Marsh Marigold — and complex messages could be conveyed by a bouquet. If both correspondents were conversant in the flower language, the names alone could be sent. I like this as a model of communication and correspondence, as a way of picturing a plant speaking to and for me, but the

meaning of each plant and the structure of the language are too definite and limited for me. I want the plant to be a prompt to my imagination — "It is the chain of accessory ideas that makes me love botany," as Rousseau wrote — and an invitation to travel in thought and deed. My own flower language is not a proper language at all, just the beginnings of language, some sounds at most, without much corresponding sense. Sometimes, among the arctic plants, I've heard something — a sound? — with my inner ear, and it seemed like a voice, perhaps addressing me directly — I was the only one present — but I couldn't catch what it was saying, though I've kept listening. This book is a record of that listening. As far as what the arctic plants mean, what they are saying, I'll leave that open and follow Dickinson when she ends her poem about the wandering arctic flower by saying

What then? Why nothing,
Only, your inference therefrom!



*Most of us are still related to our native fields as the navigator to undiscovered islands in the sea.
We can any afternoon discover a new fruit there which will surprise us by its beauty
or sweetness. So long as I saw in my walks one or two kinds of berries whose
names I did not know, the proportion of the unknown seemed
indefinitely, if not infinitely, great.*

from Thoreau's unfinished late work *Wild Fruits*

BIBLIOGRAPHY

This project has drawn on a wide variety of sources but I have confined myself here to works that I have quoted from or referred to directly. The text accompanying the pressed plants is pure quotation, mainly from eighteenth-century herbals and floras, and from more recent works on edible plants and botany generally. Think of us taking a walk among the arctic plants with Gerard's *Herball*, Polunin's *Circumpolar Arctic Flora*, Fernald's *Wild Edible Plants*, and Dana's *How to Know the Wildflowers* as our companions, with other friendly and informative books joining us briefly and exchanging a few words.

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INDEX TO PLANT NAMES

This index is intended as a practical field guide to the arctic plants of New York City. I have reprinted the index to Nicholas Polunin's *Circumpolar Arctic Flora* (1959), which surveys every plant known to grow in the arctic, and have collated it with the local field guide I've been using, *Wildflowers in the Field and Forest: A Field Guide to the Northeastern United States* (2006) by Steven Clemants and Carol Gracie. Polunin indicated the arctic species by **bold type** and I have marked the eighty-eight overlapping New York City arctic species with a **◦**.

In deciding whether a particular plant grows here, I have relied solely on the rather general distribution maps in *Wildflowers in the Field and Forest*, and have certainly made mistakes of both inclusion and omission. When he wrote of the enormous task he set himself in deciding to publish *American Ornithology* (1808-14) — to single-handedly collect, describe, and depict every bird in North America — Alexander Wilson declared "I shall at least leave a small beacon to point out where I perished." With that in mind, the present volume, which is drawing to a close, should be seen as a survey of a new territory and an indication of what I have found there so far. My work continues but I publish this imperfect volume now in the belief that, as Polunin said of his great work, "the most that can be hoped for is that it will be found useful, as an aid in identification and checking, as a work of reference so far as it goes, and as a guide and basis for truly critical studies in the future."

INDEX TO PLANT NAMES

Latin epithets, &c., of species accepted in the arctic flora, and references to illustrations of these accepted species, are given in **bold face type**. Other Latin names (of genera, synonyms, and species not upheld and accepted) are in *italics*. The bold-face references to illustrations are given opposite English names of accepted species although the captions are in Latin. In instances of an accepted species being mentioned on several different pages, the detailed description of it will normally be found near the relevant illustration. Two or more references to a particular species on the same page indicate as many *separate* items. Where a generic name is identical in spelling with its English equivalent, the latter is placed (in parentheses) after the generic name in the Index, and the Latin and English epithets &c. then intermix in alphabetical order. Hyphenated names are counted as one and cross-referenced only when necessary.

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